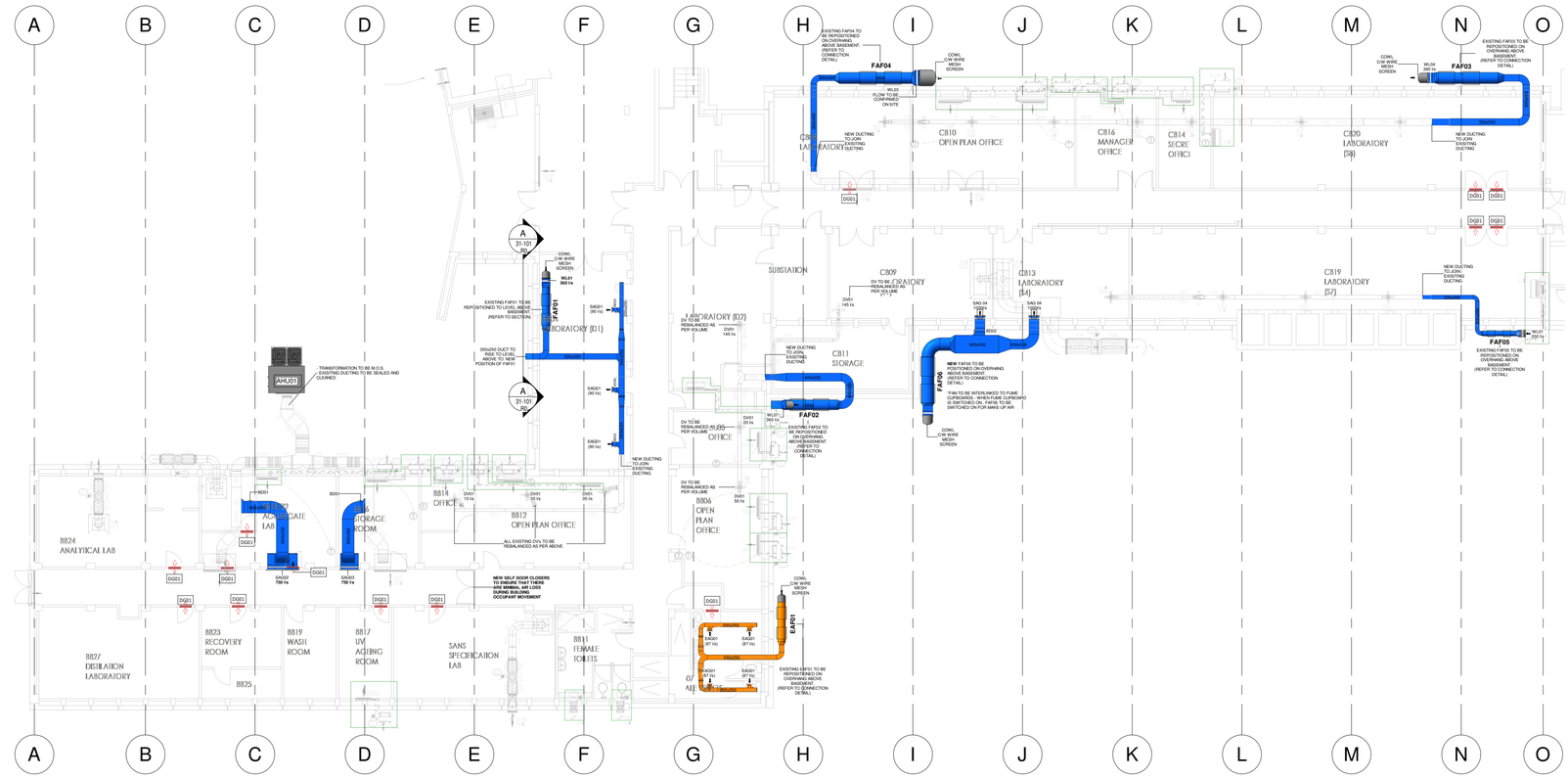
LEGEND:

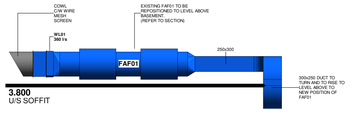
- EXTRACT AIR DUCTING
- SUPPLY AIR DUCTING
- HVAC CABLE TRAY

LEGEND:

- SUPPLY AIR GRILLE (SAG)
- DOOR GRILLE
- DISC VALVE
- BALANCING DAMPER
- AXIAL FAN c/w ATTENUAOR
- HYBRID TYPE AIR HANDLING UNIT



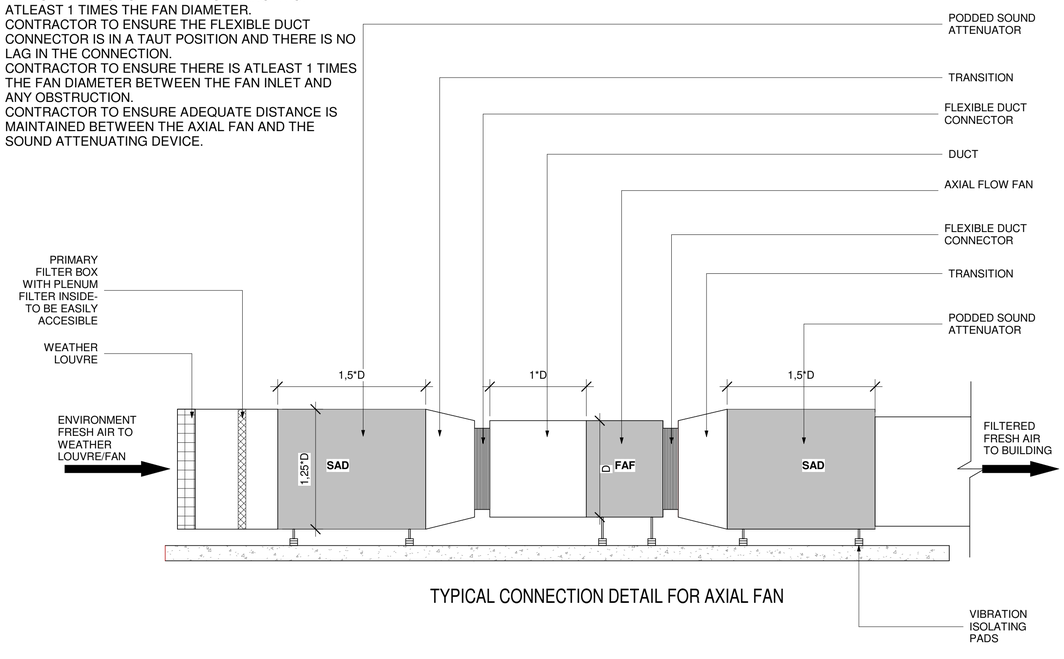
1 BASEMENT
1 : 150



A SECTION A-A
1 : 50

NOTES FOR FAN CONNECTION:

1. THE CONNECTION BETWEEN THE SOUND ATTENTUATING DEVICE AND AXIAL FAN SHOULD BE COUPLED WITH A FLEXIBLE DUCT CONNECTOR.
2. ALL FLEXIBLE DUCT CONNECTORS BETWEEN THE INET OF A FAN IS TO BE A MINIMUM LENGTH OF ATLEAST 1 TIMES THE FAN DIAMETER.
3. CONTRACTOR TO ENSURE THE FLEXIBLE DUCT CONNECTOR IS IN A TAUT POSITION AND THERE IS NO LAG IN THE CONNECTION.
4. CONTRACTOR TO ENSURE THERE IS ATLEAST 1 TIMES THE FAN DIAMETER BETWEEN THE FAN INLET AND ANY OBSTRUCTION.
5. CONTRACTOR TO ENSURE ADEQUATE DISTANCE IS MAINTAINED BETWEEN THE AXIAL FAN AND THE SOUND ATTENUATING DEVICE.



TYPICAL CONNECTION DETAIL FOR AXIAL FAN

1. GENERAL NOTES:

1.1. THIS DRAWING FORMS PART OF THE SPECIFICATION AND MUST BE READ IN CONJUNCTION WITH THE SAME.
1.2. ALL DUCTWORK TO BE MANUFACTURED IN ACCORDANCE WITH SANS-1238-2005 & SANS-10173-2003. LOW VELOCITY DUCT STANDARDS.
1.3. ALL DUCT SIZES SHOWN ARE ACTUAL SWEETMEAT SIZES.
1.4. ALL SUPPLY & RERURN DUCTS TO BE EXTERNALLY INSULATED WITH 25mm FRK.INSULATION. UNLESS OTHERWISE SPECIFIED.
1.5. ALL VENTILATION DUCTS TO BE UNINSULATED UNLESS SPECIFIED.
1.6. ALL EXPOSED DUCTS TO BE PAINTED TO SPECIFICATIONS.
1.7. ALL BENDS TO HAVE MINIMUM INTERNAL RADIUM 150mm, AND SPLITTERS UNLESS OTHERWISE SPECIFIED.
1.8. ALL ROUND DUCT BENDS UP TO Ø500mm - RADIUS 200mm AND OVER Ø500mm - RADIUS 300mm.
1.9. ALL DUCT SHOES TO BE 150mm LONG @ 45º.
1.10. ALL SPIGOTS TO BE 100mm LONG, UNLESS OTHERWISE STATED.
1.11. REFRIGERANT PIPING TO BE COPPER AND INSULATED.
1.12. ALL REFRIGERANT PIPING TO BE NEATLY ROUTED AND INSTALLED ON GALVANIZED CABLE TRAYS, UNLESS OTHERWISE SPECIFIED.
1.13. ALL DRAINS TO BE Ø32mm RIGID PVC WITH A 1:100 MINIMUM FALL.
1.14. ALL SMOKE EXTRACT DUCTING TO BE 1mm MINIMUM THICKNESS.
1.15. ALL DUCTING ENTERING THE BUILDING WILL BE LEVELED IN SUCH A WAY THAT THE DUCTING SLOPES AWAY FROM THE BUILDING AT A FALL OF 1:100.
1.16. ALL MECHANICAL EQUIPMENT AND DUCTING THAT ARE HALFTONED (GREY) ARE EXISITING EQUIPMENT - DESIGNED BY PREVIOUS CONSULTANTS.
1.17. NEW DUCTING TO BE JOINED TO EXISITING DUCTING AND SEALED TIGHT.
1.18 ALL SPLIT TYPE MIDWALL AND UNDERCEILING UNITS TO BE SERVICED AND RECOMMISIONED AS PER SPECIFICATION DOCUMENT

2. BUILDERSWORK NOTES:

2.1. ALL OPENINGS TO BE 100mm BIGGER THAN DUCT SIZES SHOWN AND TO BE MADE GOOD AFTER DUCTING HAS BEEN INSTALLED - BY BUILDER.
2.2. ALL OPENINGS TO BE 50mm BIGGER THAN GRILLE SIZES WHICH INCLUDES A 20mm THIXK TIMBER FRAME ALL ROUND OPENING - BY BUILDER.
2.3. SLEEVES IN WALLS, IN SLABS AND BEAMS FOR REFRIGERANT PIPES AND DRAINS TO BE MADE GOOD AFTER SERVICES HAVE BEEN INSTALLED - BY BUILDER.
2.4. ALL PLANTROOMS TO HAVE FLOOR DRAIN AND WATER POINT.

New Fresh Air Fans

Item No.	QTY	Description	Size Ø	Airflow (l/s)	Static Pressure (Pa)	Speed (RPM)	Phase	Motor Size (kW)	Accessories
FAF-06	1	AMS Axial Flow Fan c/w 2 off 1,5D Attenuators	1000	2000	250	1440	3	1.2 kW	Interlink Switch to Fume Cupboard & Soft Start Control System

Air Handling Unit Schedule - New

Item No	QTY	Description	Cooling Capacity (kW)	Heating Capacity (kW)	Supply Air (l/s)
AHU01	1	Air Handling Unit	38.0 kW	54.0 kW	3000 l/s

Indoor Split Unit Schedule - Existing Units

Item No	QTY	Description	Capacity (kW)	Power	Remarks
MSU01	3	Midwall AC Unit	5.1 kW	230V/ 1PH /50Hz	To be serviced and recommisoned as per specification document
MSU02	4	Midwall AC Unit	2.6 kW	230V/ 1PH /50Hz	To be serviced and recommisoned as per specification document
MSU03	4	Midwall AC Unit	7.0 kW	230V/ 1PH /50Hz	To be serviced and recommisoned as per specification document
MSU04	2	Midwall AC Unit	3.5 kW	230V/ 1PH /50Hz	To be serviced and recommisoned as per specification document
SUI01	2	Under Ceiling Unit	16.0 kW	230V/ 1PH /50Hz	To be serviced and recommisoned as per specification document
SUI02	1	Under Ceiling Unit	10.0 kW	230V/ 1PH /50Hz	To be serviced and recommisoned as per specification document

Outdoor Condensing Unit Schedule - Existing Units

Item No	QTY	Description	Capacity (kW)	Power	Remarks
SOM01	3	Midwall AC Unit	5.1 kW	230V/ 1PH /50Hz	To be serviced and recommisoned as per specification document
SOM02	4	Midwall AC Unit	2.6 kW	230V/ 1PH /50Hz	To be serviced and recommisoned as per specification document
SOM03	4	Midwall AC Unit	7.0 kW	230V/ 1PH /50Hz	To be serviced and recommisoned as per specification document
SOM04	2	Midwall AC Unit	3.5 kW	230V/ 1PH /50Hz	To be serviced and recommisoned as per specification document
SUO01	2	Under Ceiling Unit	16.0 kW	230V/ 1PH /50Hz	To be serviced and recommisoned as per specification document
SUO02	1	Under Ceiling Unit	10.0 kW	230V/ 1PH /50Hz	To be serviced and recommisoned as per specification document

New Door Grilles

Item No	QTY	Description	Size LxH	Colour
DG01	14	TROX Type AGS-T Door Grille	600 x 300	TBC

New Supply Air Grilles

Item No	QTY	Description	Size LxH / Ø	Colour
SAG01	3	TROX Type AT Supply Air Grille	200 x 200	TBC
SAG02	1	Double Deflection Supply Air Grille	1500 x 300	TBC
SAG03	1	Double Deflection Supply Air Grille	900 x 300	TBC
SAG04	2	TROX Type AT Supply Air Grille	500 x 500	TBC

New Extract Air Grilles

Item No	QTY	Description	Size LxH / Ø	Colour
EAG01	4	TROX Type AT Extract Air Grille	200 x 200	TBC

Services to be Executed on Exisiting Fresh Air Fans

Name	QTY	Location	Size Ø	Airflow (l/s)	Static Pressure (Pa)	Move Fan	Balance	New Filters & WL	New Dirt Filter Indicators	Annual Timer	Soft Start Control System	Flexible Colllars
FAF-01	1	LAB BB04	315	TBC	TBC	YES	YES	YES	YES	YES	YES	YES
FAF-02	1	LAB CB11	500	TBC	TBC	YES	YES	YES	YES	YES	YES	YES
FAF-03	1	LAB CB20	560	TBC	TBC	YES	YES	YES	YES	YES	YES	YES
FAF-04	1	LAB CB08	560	TBC	TBC	YES	YES	YES	YES	YES	YES	YES
FAF-05	1	LAB CB19	250	TBC	TBC	YES	YES	YES	YES	YES	YES	YES

Services to be Executed on Exisiting Fresh Air Fans

Name	QTY	Location	Size Ø	Airflow (l/s)	Static Pressure (Pa)	Move Fan	Balance	New WL	Annual Timer	Soft Start Control System	Flexible Colllars
EAF-01	1	Room BB07	315	TBC	TBC	YES	YES	YES	YES	YES	YES
WF01	2	Room BB11	300 x 300	TBC	TBC	NO	YES	NO	YES	NO	NO

FOR TENDER

REV.	DATE	DESCRIPTION	DRW.	DSG.	APPR.
R0	05/08/21	ISSUED FOR TENDER	WS	WS	KDP

DRG. SIZE A1

PLANTECH
ELECTRICAL AND MECHANICAL CONSULTING ENGINEERS
P.O.BOX 146 PERSEQUOR PARK 0020
TEL: (012) 349-2253

SCALE	1:150
DRAWN	WS
DESIGNED	KDP
APPROVED	KDP
DATE	05/08/21
SHT 1 OF 1	

PROJECT: CSIR SMART MOBILITIY CLUSTER BUILDING 2

TITLE: BUILDING 2 - BASEMENT AREA-HVAC LAYOUT

DWG. No.: A2167-31-02-101 | R0